

Application No.: 09/743,479

Docket No.: 21854-00016-US

REMARKS

The Office Action and prior art relied upon have been carefully considered. In an effort to expedite the prosecution claim 7 has been amended to further clarify the differences between the cited prior art and the invention. Also, several minor informalities have been corrected in the specification.

Applicant requests an acknowledgement that the priority documents have been received.

Applicant thanks the Examiner for the telephone interview held December 11, 2003, during which time the following arguments were made. The Examiner indicated that the amendments to claim 7 differentiated the invention from the cited prior art but no agreement was formally reached.

The Office Action rejected claims 7-11 on the basis of 35 U.S.C. §112, the terminology "substantially" in claim 7 having been found objectionable. The claim has been amended to avoid this issue so that further rejection on this ground is not anticipated.

Claims 7-11 have also been rejected on 35 U.S.C. §103 as met by US 5,306,745 in view of US 4,041,209.

U.S. Patent No. 5,306,745 is equivalent to Australian Patent No. 646,013 discussed as prior art on page 1 of this application. It deals with encapsulation of fungicides for controlled release by migration. The fungicide migrates out of the polymer and the structure of the polymer and the encapsulant determines the rate of release.

In particular, column 1, lines 34-55 of the '745 patent explains that the blend forming a film blends the fungicide in a first thermoplastic resin and then blends the result in a second thermoplastic resin so that during extrusion of the blend the second resin melts and surrounds the encapsulated fungicide before the first resin melts during extrusion from a die.

In column 2, lines 15-32 it is stated that the blend is preferably extruded as the core layer of the multilayer film. By incorporating the additive in the core layer, the additive is insulated by further layers. Some of the fungicide additive generally migrates into the other layers of a film, during the coextrusion. However, these further layers allow

Application No.: 09/743,479

Docket No.: 21854-00016-US

the additive concentration to be maintained inside the film during cooling from melt to solid after extrusion. The fungicide additive thereafter slowly migrates to the film surface so that it is released from the film over a period of time. The initial absence of additive from the outer layers of the film avoids a high initial loss of additive caused by fumes at the exit of the extrusion die. The slow migration of the additive to the film surface also reduces volatile losses during film making at elevated temperatures. The fungicide used in '745 is "typically an organic fungicide" (column 2, line 38).

The present invention is differentiated from the cited reference in two key respects. First, it is based on inorganic fungicides like metabisulfite. Secondly, in the present invention, it is not the additive which migrates out — but a decomposition product sulphur dioxide which is generated by water vapor contacting the metabisulfite.

In the reference the polymers are chosen for the relative melting points whereas in the present invention, polymers are selected for their water vapor transmission rates. There is no known correlation between melting point and water vapor transmission. As discussed above, in '745 the fungicide is encapsulated in the higher melting polymer which is subsequently blended with the lower melting polymer so that the fungicide is protected from heat during the extrusion in which the lower melting point polymer melts. In the present invention, the metabisulfite is first blended with the lower melting polymer (EVA) and then blended with the higher melting polymer (LLDPE). See page 3, lines 12-14 of the specification.

U.S. patent 4,041,209 is related to containers and pouches made from plastic material. One problem which arises with the usage of thin films of polymeric materials, including polyethylene is that they are sufficiently permeable or porous to allow diffusion of atmospheric oxygen from the exterior of the container or package into the interior of the container. See column 1, lines 14-23.

Col 2, lines 35-43 of the reference explains how a structural multiple ply wall for a product container has an inner container sheet ply whose composition provides low product permeability through the ply for a product disposed adjacent to a first face of the inner sheet ply. A fluid coating consisting of an aqueous solution of an oxygen reactive sulfite compound actively removes atmospheric oxygen which diffuses adjacent to the

Application No.: 09/743,479

Docket No.: 21854-00016-US

coating. The liquid or solution is disposed adjacent to the second face of the inner sheet ply. Therefore, the '209 patent is directed to a package design for an oxygen absorber. The oxygen absorber is sulphur dioxide generated by break down of a sulfite solution in the multiple ply wall structure. The materials of the walls are chosen to contain the solution and to allow oxygen to enter the space to be absorbed by the sulphur dioxide.

The '209 patent is not concerned with controlled release of sulphur dioxide into a food product to act as a fungicide. The present invention uses a blend to control the migration of water vapor into the polymer film to control the release of sulphur dioxide. The water vapor is related to the humidity build up in a fruit bag from the respiration of the fruit. The presence of humidity is favorable to fungal growth but the generation of the fungicidal sulphur dioxide prevents this from occurring.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185.

Dated: December 12, 2003

Respectfully submitted,

By *[Signature]* - 46,750
Morris Liss

Registration No.: 24,510
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425
(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Applicant